



NVIDIA Quadro High-End GPUs – Features and Benefits

12-Bit Subpixel Precision

3x that of the nearest competitive workstation graphics, 12-bit sub-pixel precision delivers high geometric accuracy, eliminating sparkles, cracks, and other rasterization anomalies.

256-Bit Memory Interface

Delivers the industry's highest memory bandwidth (up to 38.4GB/sec) for blistering data transfer. Supports the world's fastest GDDR3 memory with lower power consumption than previous generation systems.

32-Bit Floating Point Precision

Sets new standards for image clarity and quality through 32-bit floating point capabilities in shading, filtering, texturing, and blending. Enables unprecedented rendered image quality for visual effects processing.

Single Dual-Link Digital Display Connector

Dual-link TMDS transmitter supports ultra-high-resolution panels (up to 3840 x 2400 @24Hz) --which result in amazing image quality producing detailed photorealistic images.

Advanced Color Compression, Early Z-Cull

Improved pipeline color compression and early z-culling to increase effective bandwidth and improve rendering efficiency and performance.

Cg High-Level Graphics Shader Language

Cg—"C" for graphics—is a high-level, open-standard programming language for OpenGL that takes advantage of the power of programmable GPUs. NVIDIA Quadro programmable graphics pipelines leverage high-level shading languages to enable the creation and integration of real-time photorealistic effects into 3D models, scenes, and designs. This represents a major leap forward in ease and speed for the creation of real-time, realistic graphics within MCAD, DCC, and scientific applications.

NVIDIA PureVideo Technology

The high-definition enabled VPE provides the highest quality video with record low CPU utilization. Video playback is smooth, the images are clear without artifacts, and the delivery at breathtaking frame rates.

Full 128-Bit Precision Graphics Pipeline

Enables sophisticated mathematical computations to maintain high accuracy, resulting in unmatched visual quality. Full IEEE 32-bit floating-point precision per color component (RGBA) delivers millions of color variations with the broadest dynamic range.

Full-Scene Antialiasing (FSAA)

Up to 16x FSAA dramatically reduces visual aliasing artifacts or "jaggies" at resolutions up to 3840x2400, resulting in highly realistic scenes.

Hardware 3D Window Clipping

Hardware accelerated clip regions (data transfer mechanism between a window and the frame buffer) which improves overall graphics performance by increasing transfer speed between color buffer and frame buffer.

Hardware-Accelerated Pixel Read-Back

Up to 2.4GB/sec pixel read-back performance delivers massive host throughput, more than 5x the performance of previous generation graphic systems. * Note: Up to 1GB/sec pixel read-back on NVIDIA Quadro FX 4400 and 3400 GPUs.

Highest Workstation Application Performance

Next-generation architecture enables over 2x improvement in geometry and fill rates with the industry's highest performance for professional CAD, DCC, and scientific applications.

**High-Performance Display Outputs**

400MHz RAMDACs and dual DVI digital connectors drive the highest resolution digital displays available on the market.

Next-Generation Vertex & Pixel Programmability

The NVIDIA Quadro GPUs introduce infinite length vertex programs and dynamic flow control, removing the previous limits on complexity, and structure of shader programs. With full support for Vertex and Shader Model 3.0, NVIDIA Quadro GPUs deliver sophisticated effects never before imagined for real-time graphics systems.

NVIDIA High Precision Dynamic-Range (HPDR) Technology

Sets new standards for image clarity and quality through floating point capabilities in shading, filtering, texturing and blending. Enables unprecedented rendered image quality for visual effects processing.

NVIDIA Quadro Unified Memory Architecture

Allows for superior memory management, which efficiently allocates and shares memory resources between concurrent graphics windows and applications.

nView Multi-Display Technology

The nView hardware and software technology combination delivers maximum flexibility for multi-display options, and provides unprecedented end-user control of the desktop experience. NVIDIA GPUs are enabled to support multi-displays, but graphics cards vary. Please verify multi-display support in the graphics card before purchasing.

PCI Express Certified

PCI Express is a new Intel bus architecture that doubles the bandwidth of the AGP 8X bus, delivering over 4 GB per second in both upstream and downstream data transfers.

Powerwall

NVIDIA's patented single-system powerwall technology allows any application to be projected on a dual-channel powerwall with sophisticated edge blending in order to achieve uniform luminosity. Powerwall works transparently with any application.

Proven Workstation Graphics Architecture

The NVIDIA Quadro architecture takes application performance to new levels by featuring parallel vertex engines, a radically new line engine, the industry's first on-chip vertex cache, and fully programmable pixel pipelines coupled to a high-speed graphics DDR DRAM bus.

Quad Buffered Stereo

Offers enhanced visual experience for professional applications that demand stereo viewing capability.

Rotated-Grid Full-Scene Antialiasing (RG FSAA)

The rotated grid FSAA sampling algorithm introduces far greater sophistication in the sampling pattern, significantly increasing color accuracy and visual quality for edges and lines, reducing "jaggies" while maintaining performance.

SLI Technology

The NVIDIA Scalable Link Interface technology enables intelligent and transparent scaling of professional application performance. Designed for PCI Express and supported on NVIDIA Quadro FX 3450.

Unified Driver Architecture (UDA)

Part of the NVIDIA Forceware unified software environment (USE). The NVIDIA UDA guarantees forward and backward compatibility with software drivers. Simplifies upgrading to a new NVIDIA product because all NVIDIA products work with the same driver software.